

What is claimed is:

1. A method for detecting cracks in a honeycomb structure which includes a plurality of cells penetrating itself from its one end face to the other, comprising the steps of:

5 placing the honeycomb structure on the upper face of a first plate with the two end faces of the honeycomb structure facing up and down, respectively;

applying to the honeycomb structure impact load adequately heavy to make powdery substance fall off the cracked portions of the honeycomb structure; and

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detecting the cracks in the honeycomb structure by detecting the powdery substance having fallen off the cracked portions.

2. The method for detecting cracks in a honeycomb structure according to claim 1, wherein the impact load is applied to the upper face of the honeycomb structure.

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3. The method for detecting cracks in a honeycomb structure according to claim 2, wherein the impact load is applied to the honeycomb structure in such a manner as to dispose a second plate on the upper face of the honeycomb structure and crash an impact member into the plate.

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4. The method for detecting cracks in a honeycomb structure according to claim 3, wherein the impact member is crashed

into the second plate by leaving the impact member to spontaneously fall to the second plate.

5. The method for detecting cracks in a honeycomb structure according to claim 3, wherein the impact load is applied after  
5 a first cushioning member is disposed between the honeycomb structure and the second plate.

6. The method for detecting cracks in a honeycomb structure according to claim 5, wherein the area of the first cushioning member's face facing the honeycomb structure is smaller than  
10 that of the upper face of the honeycomb structure.

7. The method for detecting cracks in a honeycomb structure according to claim 5, wherein the impact load is applied after a second cushioning member is disposed between the upper face of the first plate and the lower face of the honeycomb  
15 structure.

8. The method for detecting cracks in a honeycomb structure according to claim 7, wherein the area of the second cushioning member's face facing the honeycomb structure is smaller than that of the lower face of the honeycomb  
20 structure.

9. The method for detecting cracks in a honeycomb structure according to claim 5, wherein the first cushioning member

is made up of at least one kind of material selected from the group consisting of paper, rubber and plastics materials.

10. The method for detecting cracks in a honeycomb structure according to claim 7, wherein the second cushioning member  
5 is made up of at least one kind of material selected from the group consisting of paper, rubber and plastics materials.

11. The method for detecting cracks in a honeycomb structure according to claim 3, wherein the impact member is made up  
10 of at least one kind of material selected from the group consisting of metal, stone, ceramic and wood materials.

12. The method for detecting cracks in a honeycomb structure according to claim 3, wherein the area of the second plate's face facing the honeycomb structure is smaller than that of  
15 the upper face of the honeycomb structure.

13. The method for detecting cracks in a honeycomb structure according to claim 3, wherein the second plate is made up of at least one kind of material selected from the group consisting of metal, stone, ceramic and wood materials.

20 14. The method for detecting cracks in a honeycomb structure according to claim 2, wherein the impact load is applied to the honeycomb structure in such a manner as to dispose a first cushioning member on the upper face of the honeycomb

structure and crash the impact member into the first cushioning member.

15. The method for detecting cracks in a honeycomb structure  
5 according to claim 1, wherein the area of the upper face of the first plate is smaller than that of the lower face of the honeycomb structure.

16. The method for detecting cracks in a honeycomb structure according to claim 1, wherein the upper face of the first  
10 plate is made up of at least one kind of material selected from the group consisting of metal, stone, ceramic and wood materials.

17. The method for detecting cracks in a honeycomb structure according to claim 1, wherein the color of the upper face  
15 of the first plate is different from that of the powdery substance.

18. The method for detecting cracks in a honeycomb structure according to claim 7, wherein the color of the second cushioning member is different from that of the powdery  
20 substance.

19. The method for detecting cracks in a honeycomb structure according to claim 1, wherein the impact load is applied to the honeycomb structure after a discrimination sheet having

a face colored differently from the powdery substance is disposed between the lower face of the honeycomb structure and the upper face of the first plate in such a manner that the face colored differently from the powdery substance faces the honeycomb structure.

20. An apparatus for detecting cracks in a honeycomb structure which includes a plurality of cells penetrating itself from its one end face to the other, comprising:

a first plate having a upper face where the honeycomb structure is placed with its two end faces facing up and down, respectively; and

impact means for applying to the honeycomb structure impact load adequately heavy to make powdery substance fall off the cracked portions of the honeycomb structure.

21. The apparatus for detecting cracks in a honeycomb structure according to claim 20, wherein the impact means applies impact load to the upper face of the honeycomb structure.

22. The apparatus for detecting cracks in a honeycomb structure according to claim 20, further comprising a second plate disposed on the upper face of the honeycomb structure, wherein the impact means includes an impact member which is crashed into the second plate.

23. The apparatus for detecting cracks in a honeycomb structure according to claim 22, wherein the impact means leaves the impact member to spontaneously fall to the second plate.

5 24. The apparatus for detecting cracks in a honeycomb structure according to claim 22, further comprising a first cushioning member disposed between the honeycomb structure and the second plate.

10 25. The apparatus for detecting cracks in a honeycomb structure according to claim 24, wherein the area of the first cushioning member's face facing the honeycomb structure is smaller than that of the upper face of the honeycomb structure.

15 26. The apparatus for detecting cracks in a honeycomb structure according to claim 24, further comprising a second cushioning member disposed between the upper face of the first plate and the lower face of the honeycomb structure.

20 27. The apparatus for detecting cracks in a honeycomb structure according to claim 26, wherein the area of the second cushioning member's face facing the honeycomb structure is smaller than that of the lower face of the honeycomb structure.

28. The apparatus for detecting cracks in a honeycomb structure according to claim 24, wherein the first cushioning member is made up of at least one kind of material selected from the group consisting of paper, rubber and plastics materials.

29. The apparatus for detecting cracks in a honeycomb structure according to claim 26, wherein the second cushioning member is made up of at least one kind of material selected from the group consisting of paper, rubber and plastics materials.

30. The apparatus for detecting cracks in a honeycomb structure according to claim 22, wherein the impact member is made up of at least one kind of material selected from the group consisting of metal, stone, ceramic and wood materials.

31. The apparatus for detecting cracks in a honeycomb structure according to claim 22, wherein the area of the second plate's face facing the honeycomb structure is smaller than that of the upper face of the honeycomb structure.

32. The apparatus for detecting cracks in a honeycomb structure according to claim 22, wherein the second plate is made up of at least one kind of material selected from

the group consisting of metal, stone, ceramic and wood materials.

33. The apparatus for detecting cracks in a honeycomb structure according to claim 21, further comprising a first cushioning member disposed on the upper face of the honeycomb structure, wherein the impact means includes an impact member which is crashed into the first cushioning member.

34. The apparatus for detecting cracks in a honeycomb structure according to claim 20, wherein the area of the upper face of the first plate is smaller than that of the lower face of the honeycomb structure.

35. The apparatus for detecting cracks in a honeycomb structure according to claim 20, wherein the upper face of the first plate is made up of at least one kind of material selected from the group consisting of metal, stone, ceramic and wood materials.

36. The apparatus for detecting cracks in a honeycomb structure according to claim 20, wherein the color of the upper face of the first plate is different from that of the powdery substance.

37. The apparatus for detecting cracks in a honeycomb structure according to claim 26, wherein the color of the



second cushioning member is different from that of the powdery substance.

38. The apparatus for detecting cracks in a honeycomb structure according to claim 20, further comprising a discrimination sheet which has a face differently colored from the powdery substance and is disposed between the lower face of the honeycomb structure and the upper face of the first plate in such a manner that the face differently colored from the powdery substance faces the honeycomb structure.